

CLAIMS

What is claimed is:

1 1. A method of arranging divided recording area segments of a recording
2 medium in a broadcast receiving system having a random access storage device,
3 comprising:

4 disposing a circular buffer area in a first predetermined position of the
5 recording medium, for recording a first broadcast signal in real time while reproducing a
6 previously recorded second broadcast signal;

7 disposing a video file area in a second predetermined position of the
8 recording medium, for recording a third broadcast signal in a logical file at a
9 predetermined time; and

10 disposing a control information area in a third predetermined position of the
11 recording medium, for recording information about the first, second and third broadcast
12 signals.

1 2. The method of claim 1, wherein the disposing of the video file area
2 comprises dividing the video file area into a plurality of segments and individually
3 managing the segments.

1 3. The method of claim 1, wherein the circular buffer area and video file area
2 include blocks of fixed sizes.

1 4. The method of claim 1, wherein the disposing of the video file area
2 comprises uncontinuously arranging video file blocks in the video file area.

1 5. The method of claim 2, wherein the disposing of the video file area
2 comprises uncontinuously arranging video file blocks in the video file area.

1 6. The method of claim 1, further comprising disposing a general file area in a
2 predetermined fourth position of the recording medium, for managing files of
3 information other than continuous data like video information.

1 7. The method of claim 2, further comprising disposing a general file area in a
2 predetermined fourth position of the recording medium, for managing files of
3 information other than continuous data like video information.

1 8. The method of claim 3, further comprising disposing a general file area in a
2 predetermined fourth position of the recording medium, for managing files of
3 information other than continuous data like video information.

1 9. A method of arranging divided recording area segments of a recording
2 medium in a broadcast receiving system having a hard disk drive, comprising:

3 disposing a circular buffer area at the center of the hard disk drive, for
4 recording a first broadcast signal in real time while reproducing a previously recorded
5 second broadcast signal;

6 disposing a first video file area and a second video file area respectively in
7 an outer circumferential portion and an inner circumferential portion of a recording
8 surface of the hard disk drive, for recording a third broadcast signal in a logical file at a
9 predetermined time;

10 disposing a general file area at a boundary of the circular buffer area, for
11 managing files of information other than continuous data like video information; and

12 disposing a control information area between the circular buffer area and
13 the first video file area, for recording information about the first, second and third
14 broadcast signals.

1 10. The method of claim 9, wherein the circular buffer area is symmetrical with
2 respect to a center track of the hard disk drive recording surface.

1 11. A method of arranging divided recording area segments of a recording medium
2 in a broadcast receiving system having a hard disk drive, the method comprising:
3 forming a first area on the recording medium, for recording a first broadcast
4 signal which is currently being broadcast and reproducing a second broadcast signal previously
5 recorded in real time; and
6 forming a second area on the recording medium, for recording a third broadcast
7 signal at a reserved time.

1 12. The method of claim 11, further comprising:
2 forming a third area on the recording medium, for recording information
3 relating to the first through third broadcast signals.

1 13. The method of claim 11, wherein:
2 the first area is a circular buffer area which has blocks of fixed sizes and
3 contains continuous data; and
4 the second area is a video file area which has blocks of fixed sizes and contains
5 uncontinuous data in logical files.

1 14. The method of claim 11, wherein the forming of the second area comprises:
2 forming a first file area at an outer peripheral side of the first area; and
3 forming a second file area at an inner peripheral side of the first area;
4 wherein the third broadcast signal is to be recorded in one of the first and
5 second file areas, and a fourth broadcast signal is already recorded in the other one of the first
6 and second file areas.

1 15. The method of claim 11, further comprising:
2 simultaneously selecting time-delayed watching and reproduction; and
3 reading the first through third video streams in an ascending track number order
4 in a C-LOOK algorithm.

1 16. The method of claim 14, wherein the forming of first area comprises:
2 forming the first area so as to have tracks at both sides of a center track of the
3 recording medium.

1 17. The method of claim 13, further comprising:
2 forming a fourth area to store information other than continuous information of
3 video streams.

1 18. A method of processing broadcast signals from/on a recording medium in a
2 broadcast receiving system having a hard disk drive, wherein the recording medium has a first
3 area, for recording a first broadcast signal which is currently being broadcast and reproducing
4 a second broadcast signal previously recorded in real time, and a second area, for recording a
5 third broadcast signal at a reserved time, and a fourth broadcast signal previously recorded,
6 the method comprising:
7 inputting the first and third broadcast signals simultaneously in a first period;
8 recording the first and third broadcast signals on the first and second areas,
9 respectively, and reading the second and fourth broadcast signals from the first and second
10 areas, respectively, in a second period next to the first period; and
11 reproducing the read second and fourth broadcast signals in a third time period
12 next to the second period.

1 19. A recording medium in a broadcast receiving system having a hard disk drive,
2 the recording medium comprising:

3 a first area to record a first broadcast signal which is currently being broadcast
4 and reproduce a second broadcast signal previously recorded in real time; and
5 a second area, to record a third broadcast signal at a reserved time.

1 20. The recording medium of claim 19, further comprising:
2 a third area to record information relating to the first through third broadcast
3 signals.

1 21. The recording medium of claim 19, wherein:
2 the first area is a circular buffer area which has blocks of fixed sizes and
3 contains continuous data; and
4 the second area is a video file area which has blocks of fixed sizes and contains
5 uncontinuous data in logical files.

1 22. The recording medium of claim 19, wherein the second area comprises:
2 a first file area at an outer peripheral side of the first area; and
3 a second file area at an inner peripheral side of the first area;
4 wherein the third broadcast signal is to be recorded in one of the first and
5 second file areas, and a fourth broadcast signal is already recorded in the other one of the first
6 and second file areas.

1 23. The recording medium of claim 19, wherein the first area comprises:
2 tracks at both sides of a center track of the recording medium.

1 24. The recording medium of claim 20, further comprising:
2 a fourth area to store information other than continuous information of video
3 streams.

1 25. A broadcast receiving system, comprising:

2 a hard disk drive having a hard drive; and
3 a controller which forms a first area on the recording medium, for recording a
4 first broadcast signal which is currently being broadcast and reproducing a second broadcast
5 signal previously recorded in real time, and forms a second area on the recording medium, for
6 recording a third broadcast signal at a reserved time.

1 26. The broadcast receiving system of claim 25, wherein the controller forms a
2 third area on the recording medium, for recording information relating to the first through
3 third broadcast signals.

1 27. The broadcast receiving system of claim 25, wherein:
2 the first area is a circular buffer area which has blocks of fixed sizes and
3 contains continuous data; and
4 the second area is a video file area which has blocks of fixed sizes and contains
5 uncontinuous data in logical files.

1 28. The broadcast receiving system of claim 25, wherein the controller forms the
2 second area to comprise:
3 a first file area at an outer peripheral side of the first area; and
4 a second file area at an inner peripheral side of the first area;
5 wherein the third broadcast signal is to be recorded in one of the first and
6 second file areas, and a fourth broadcast signal is already recorded in the other one of the first
7 and second file areas.

1 29. The broadcast receiving system of claim 25, further comprising:
2 an input device to simultaneously select time-delayed watching and
3 reproduction; and
4 wherein the controller reads or records the first through third video streams in
5 an ascending track number order in a C-LOOK algorithm.

1 30. The broadcast receiving system of claim 28, wherein the controller forms the
2 first area so as to have tracks at both sides of a center track of the hard drive.

1 31. The broadcast receiving system of claim 30, wherein the controller forms a
2 fourth area to store information other than continuous information of video streams.

1 32. The broadcast receiving system of claim 25, further comprising:
2 a random access memory to temporarily store the first through third broadcast
3 signals prior to recording on and subsequent to reading from the recording medium; and
4 a video recovery unit to restore the first through third broadcast signals
5 reproduced read from recording medium and temporarily stored in the random access memory
6 to respective original signals.

1 33. The broadcast receiving system of claim 32, further comprising:
2 a timer to set the reserved time.

1 34. The broadcast receiving system of claim 32, further comprising:
2 a broadcast signal receiver comprising
3 a first radio frequency tuner to receive an external digital broadcast signal as the
4 first, second or third broadcast signal,
5 a second radio frequency tuner to receive an external analog broadcast signal,
6 a video compressor to convert the received analog signal to a digital signal and
7 compress the digital signal as the first, second or third broadcast signal, and
8 a selector to selectively enable transmission of the external digital broadcast
9 signal and the compressed digital signal to the random access memory.

1 35. The broadcast receiving system of claim 25, wherein the controller comprises:

2 a read only memory to store control program data to control the hard disk
3 drive; and
4 a random access memory to temporarily store data generated during control
5 operations of the hard disk drive.

1 36. A broadcast receiving system for processing broadcast signals from/on a
2 recording medium in a broadcast receiving system having a hard disk drive, wherein the
3 recording medium has a first area, for recording a first broadcast signal which is currently
4 being broadcast and reproducing a second broadcast signal previously recorded in real time,
5 and a second area, for recording a third broadcast signal at a reserved time, and a fourth
6 broadcast signal previously recorded, the broadcast receiving system comprising:
7 a random access memory to receive the first and third broadcast signals
8 simultaneously in a first period;
9 a hard disk drive to record the first and third broadcast signals on the first and
10 second areas, respectively, and reading the second and fourth broadcast signals from the first
11 and second areas, respectively, in a second period next to the first period; and
12 a video recovery unit to reproduce the read second and fourth broadcast signals
13 in a third time period next to the second period.